What Should We Teach Students with Moderate and Severe Developmental Disabilities?

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One day in the spring of 2004, I went to visit a special education teacher in a classroom for students with moderate/severe intellectual disability in the urban school system that surrounds the university where I teach in Charlotte. The teacher was a participant in a study I was conducting on teaching literacy. The night before I visited the classroom, I began to worry about asking teachers to try a literacy lesson that involved a read aloud and comprehension questions. After spending 20 years convincing teachers of the importance of teaching skills directly referenced to home and community activities, I felt I might be leading these teachers astray. What would happen to the students who lacked basic self-care if their teacher devoted so much effort to the comprehension of books?

When I arrived, the teacher began to provide some background on the lesson she would show us. Then a loud siren began to sound, the signal for a school lock down. Not sure if this was a drill or actual lock down in this inner city school, the teacher locked her classroom door and ushered us all into the classroom bathroom as instructed in the school's policy for this class. Fortunately, the bathroom was large enough to hold 10 students, a paraprofessional, the teacher and me. The adults were the only ones anxious about the event; the students thought it delightful to be "hiding" together in the bathroom. One student decided she had to use the toilet and proudly showed the group her new independence. When the next siren sounded, we exited the bathroom and learned it was only a drill. Two students with intellectual disability, who should have been in their general education classrooms during the drill, came bursting through the door with the assistant principal. The teacher found out later that when the siren sounded, the students' general education teacher sent the students back to their special education classroom

assuming inclusion did not apply to lockdowns. This left the students stranded in a hall with all classroom doors locked where they were found by an angry assistant principal. Fortunately the lockdown was only a drill, giving the special education teacher an opportunity to help the general education teacher realize these were "her students" in an emergency.

Needless to say, the excitement created and time lost for the lockdown, made it impossible to observe the literacy lesson that day. I did get to meet the student for whom it was planned. She was 6 years old and her IEP had no goals in literacy. Instead, the goals set by her prior teacher focused on skills related to daily functioning like toileting, eating, and communicating basic needs (e.g., eat, toilet). Like many of the families served in this school system, she came from a family who had recently immigrated to the United States. I wondered as I drove home that day whether the kind of literacy instruction I had envisioned could ever be achieved in this context. Not only was there the issue of incorporating this instruction into an already full schedule, the teachers also faced the challenges that come with the daily realities of life in public schools, like lockdowns, fragile inclusion, and students who come from widely diverse backgrounds. As you may know from my research, something happened that convinced me to push forward to promote literacy and other academic instruction for students with moderate and severe disabilities. Let me explain what led me to believe more academic learning might be possible.

I relocated to the University of North Carolina at Charlotte in 1998 after 17 years at Lehigh University where I focused on research on teaching functional life skills to students and adults with moderate and severe intellectual disability or autism spectrum disorders. The academic content I targeted in my research was "functional academics" because it focused primarily on the activity (e.g., grocery shopping; cooking; making a purchase), and secondarily

on the academic response (e.g., grocery sight words; recipe words; using a dollar). When I was in my doctoral program in the late 1970s, teaching students to engage in activities typical of peers of the same chronological age to prepare them for a future of increased independence in the community was a new idea proposed by experts like Lou Brown (Brown et al., 1979). I was fortunate to study with one of the leaders in severe disabilities, Marti Snell, who developed one of the earliest textbooks in this specialty (Snell, 1978). I built my early research career being one of many to discover that teaching community-referenced skills was not only an ideal, but one that could be demonstrated through using principles of applied behavior analysis. I promoted teaching functional life skills in my writing (e.g., Browder, 2001) and even proposed a decision model for when *not* to teach academics to students with severe disabilities (Browder & Snell, 1993; p. 443). As I tell my students, I no longer agree with the Browder of 1993 who recommended some students bypass academic learning.

In 1998, the 1997 Amendments of IDEA (PL 105-17) had recently been passed. These amendments included requiring students to have access to general curriculum and to offer an alternate assessment for students unable to participate in state's general assessments with accommodations. On one of my trips to a conference, I happened to sit by a special education director from a large school system in a nearby state. She recognized me and was eager to get my impression about testing students with severe disabilities on state academic content standards. I was so entrenched in my research on functional life skills at the time that I could not even absorb what she meant. I thought she had misinterpreted IDEA 1997, but her question piqued my interest about the newly emerging alternate assessments. Because I had a longstanding interest in how to assess students with severe disabilities, I attended a session at the international CEC conference that year on alternate assessments. I quickly realized states were

still making decisions about how to assess this population. Being eager to join the conversation and having devoted some writing to the topic of assessment of students with severe disabilities (e.g., Browder, 1987; 2001), I began to do research on alternate assessment.

In summarizing the research with my colleagues, it became clear there were many questions about both what and how to assess students with the more severe disabilities (Browder et al., 2003). One of the best early models was a portfolio assessment developed in Kentucky (Kleinert & Kearns, 1999). North Carolina developed a similar portfolio of student classroom work. I became a proponent of using data to show progress on this work and illustrated with a research team how training teachers in data-based decisions improved student outcomes on the alternate assessment (Browder, Karvonen, Davis, Fallin, & Courtade-Little, 2005). While the portfolios focused on language arts and math, we were still primarily showing teachers ways to incorporate functional academics. For example, one sample lesson plan we developed for teachers focused on recognizing numbers while making a smoothie in a blender. In another, students learned to read the sight words that made up their daily schedule. While each set of skills were important, they did not address the academic content standards typical of math and language arts for the students' assigned grade.

Two things radically altered my thinking about how much academics might be taught. First, our research teams began to conduct content analyses of several states' alternate assessments (Browder et al., 2004; Flowers, Browder, & Ahlgrim-Delzell, 2006). I thought we would find that the assessments contained functional life skills dressed in various ways to be called math and reading (e.g., counting items to pass out a snack; reading a restroom sign). I sometimes referred to our content analyses as the "Emperor's New Clothes" based on the children's book by this name. Like the emperor who is convinced to have a suit made from

invisible cloth, I thought we would discover a lack of substance in the academic content in these assessments. Some assessment items were what I predicted- daily living skills with very minor academic links. Some items failed to be either functional or academics by trying too hard to be both (e.g., measuring growth of fingernails during a manicure). To my surprise, some items reflected skills with much higher academic content than I had ever seen taught, but operationalized in ways that seemed teachable. These skills especially intrigued me because they modeled a way to gain entry into the grade level content for students beginning with lower numeracy and literacy skills. For example, students could count tiles to indicate the surface area of a rectangle in square inches. By doing so, students could apply emerging counting skills while having a "hands on" experience with the concept of surface area. A second example was to have students indicate the plot of a story by placing three pictures in sequence. Using pictures to retell a story sequence also seemed doable for many students with moderate and severe disabilities if the text were read aloud and understandable. Both types of skills were opening the door to meaningful participation in grade level content.

After this research discovery that came from close inspection of some of the best alternate asessments states were developing, the second event that shaped my thinking was the passage of No Child Left Behind (NCLB, 2001) requiring schools to "count" students with significant cognitive disabilities in school accountability systems using the outcomes of these alternate assessments. NCLB also required that alternate assessments be aligned with the state academic content standards, even if based on alternate achievement standards. The stakes were now high for schools to provide academic content instruction for students with severe disabilities and to use scientifically based interventions.

I wondered what evidence existed on teaching academic content to students with moderate and severe developmental disabilities and worked with teams at our university to conduct some comprehensive reviews of the experimental research literature. We discovered research on reading was primarily focused on sight word instruction (Browder, Wakeman, Spooner, Ahlgrim-Delzell, & Algozzine, 2006) and mathematics on money and simple computation (Browder, Spooner, Ahlgrim-Delzell, Harris, & Wakeman, 2008.) We could not find any research on science until we included daily living skills studies with some science link (Spooner, Knight, Browder, Jimenez, & DiBiase, 2011.) While these reviews provided evidence students with moderate and severe disabilities might learn academic content, there were no models for teaching content that aligned with grade level content standards in the experimental research. There also was minimal guidance on teaching academics in the textbooks in severe disabilities at that time. There were some early models in the literature. For example, Ryndak and Alper (1996) described how to blend content from the general curriculum and functional life skills in planning IEPs. Downing and Demchak (1996) offered suggestions for adapting general curriculum content to be inclusive of students with severe disabilities. Some qualitative researchers had observed how students with moderate and severe intellectual disabilities made transitions into independent reading (Kliewer, 1998; Ryndak, Morrison, & Sommerstein, 1999). I found this descriptive and qualitative literature provided excellent foundations for thinking more about how to design experimental research on grade-aligned academic instruction. For example, I was convinced of the importance of all students having access to the literature of their grade level. As an experimental researcher, I also was eager to build on these descriptions to demonstrate a causal relationship between a defined intervention and student learning.

While we continued to do some research on alternate assessment as part of the National Alternate Assessment Center (e.g., Flowers, Wakeman, Browder, & Karvonen, 2009), I became absorbed with finding out if students with moderate and severe developmental disabilities could meet the increased academic content expectation reflected in NCLB (2001). How could policy require schools to be accountable for students with severe disabilities learning academic content with such a limited evidence base? Our research team began with literacy. I found my first ideas by considering early childhood resources on using interactive read alouds (e.g., Ezell & Justice, 2005) and some of the ways shared stories had been adapted in case studies with students with severe disabilities (e.g., Koppenhaver, Erickson, & Skotko, 2001.). Our team brainstormed how to make these read alouds age and grade appropriate. We would encourage teachers to use literature typically read by the students' same age peers and add the types of supports found in younger literature. For example, books for preschoolers often use repetition of a key phrase. We decided any book could be augmented by repetition of the main idea at the end of each page. Sometimes books for young readers are made of cardboard for easy page turning. We discovered several ways to make the books easy to manipulate. In an interactive read aloud, the student typically takes multiples turns engaging with the content as pages are read. We created multiple ideas for these turns like locating a picture or key word, answering a simple recall question, or helping to read the repeated story line using a voice output communication device. We also noted that books could be shortened for brief attention spans by skipping some sentences and pages without losing the plot. We recruited teachers for this first study on literacy. We gave the teachers a general format for a lesson that began with some vocabulary instruction, then a read aloud of a story, followed by comprehension questions, and finally an activity using the topic of the story (e.g, artwork). This takes me back to my visit to the classroom in Charlotte.

Despite the prior lockdown experience, the teacher still wanted me to observe the literacy lesson she had developed for our research. When I went back to see the student, the teacher had chosen to read aloud a book based on the Disney movie Toy Story because the student had a high preference for this topic. The teacher showed me the communication board she had made with symbols for the book Toy Story such as robot, cowboy, birthday cake, etc. The board had nine abstract symbols; none were pictures from the book. The last communication symbols I had seen for this student were "eat" and "toilet" so the board seemed far too complex to me. I was not expecting much as the teacher began to read the story aloud and pause to ask comprehension questions.

She asked, "Who was the favorite toy first?" To my surprise, the girl pointed to the symbol for cowboy.

"Who was the new toy?" She pointed to the robot. Now I was really shocked.

"When did the boy get the new toy?" The girl leaned over the picture of the birthday cake and began to blow as if blowing out the candles. I was truly amazed!!

Six months before, it seemed appropriate simply to target a few communication symbols for this student to communicate basic needs. Through literacy instruction, it became evident this student could communicate much more if we gave her materials about which to communicate (e.g., a story) and an adequate range of symbols. As I drove home that day, the magnitude of what I had seen began to capture my imagination. If this student could learn these symbols so quickly when the teacher had a procedure to follow and the student had motivational materials, how much more could she learn? Would she be able to comprehend more advanced text read aloud? Would she be able to learn to read? In fact, in the years to come, this student did learn to

read. She mastered decoding and learned to read simple passages (1^{st}-2^{nd} grade level), with comprehension of what she had read. What if the teacher had spent that first year only focused on pointing to the picture symbols for the restroom, to eat, and to take breaks? What if in future years the girl only had been given the chance to learn lists of everyday sight words? How could we have discovered that she had the potential to learn to read except by teaching her to read? Her IQ, which was well below 55, did not predict her success. Her lack of early literacy skills or even a communication system did not predict her success. What promoted her success was the opportunity to learn with skills broken into small steps taught with systematic prompting and feedback. While learning early literacy skills, and later to read, she also learned to request bathroom breaks and to take care of her personal needs. These did not seem like such large achievements when her teachers were focused on milestones in reading.

This student was one of the first participants in Project RAISE (Browder & Flowers, 2005), an IES-funded project focused on developing a method to teach early literacy and reading to students with IQs below 55. Students made important gains in phonological awareness which we measured using a nonverbal assessment because so many of the participants relied on AAC (Browder, Ahlgrim-Delzell, Flowers, & Baker, 2012). While almost 100 students participated in Project RAISE, and most made literacy gains, this student was one of the stars who not only mastered all of the levels of the early literacy program, but graduated into a beginning reading program. As we were making our discoveries, other researchers were also demonstrating that students with intellectual disability could learn to read (e.g., Allor, Mathes, Roberts, Jones, & Champlin, 2010; Al Otaiba & Hosp, 2004; Bradford, Alberto, Houchins, Shippen, & Flores, 2006.)

For older students who continued to be nonreaders, we developed the interactive read aloud to be focused on a summary of a novel from the students' grade level (Browder, Trela, & Jimenez, 2007.) To create this adapted text, we asked reading experts to help us select high quality novels that were the most frequently taught in the students' grade band (e.g., middle school). We then rewrote the novel into short chapter summaries and added features like a repeating story line. (For an example of a text summary, see Figure 1). We also found we were able to teach comprehension responses using the story format to students with the most severe disabilities (Browder, Lee, & Mims, 2011; Mims, Browder, Baker, Lee, & Spooner, 2009.) In a few years, shared story reading became an evidence-based practice teachers could use to promote comprehension of a variety of text (Hudson & Test, 2011) and was replicated by other researchers (Shurr & Taber-Doughty, 2012). When we did the original review on reading, it was disturbing to discover how few of the studies had any measure of comprehension (Browder et al., 2006.) We have continued to build strategies to teach comprehension in our research on interactive read alouds (e.g., Mims, Browder, & Hudson, 2012.) One of our teams also developed a conceptual model for literacy for students with severe disabilities (Browder, et al., 2008.) In this model, we propose giving all students the opportunity to learn to read and to make this instruction a high priority in the elementary years. We also propose teaching all students to comprehend text through the use of interactive read alouds. This ensures students build comprehension even if independent reading is slow to progress or not attained.

Having increased comprehension of text opens opportunities for students with moderate and severe disabilities. Understanding the content of text is not only crucial to overall academic success, but to many activities of daily life. Reading may be one of the most "functional" skills students can learn as it prepares them to be able to use the vast resources of the internet, to enjoy

literature, to read job manuals, and to learn about current events. Given the increasing evidence that students with moderate and severe disabilities can learn to read (Allor et al., 2010) or at least to comprehend text read aloud (Hudson & Test, 2011), I would propose that literacy be at the top of the list for what to teach students with moderate and severe disabilities (I use the term "literacy" instead of reading to be inclusive of students who "read" through alternative means of accessing text). As Katims (2000) described, historically, literacy has not been the priority for students with intellectual disability. Even the term "trainable" was applied to designate students who needed training in skills of daily living versus those academically "educable." To make literacy a priority does not require forgoing teaching skills of daily living which can be addressed during their naturally occurring routines (e.g., eating with a spoon during lunch; putting on a coat before going outside; washing hands after toileting). Other skills might be taught during a specific class time devoted to life skills (e.g., cooking, budgeting) and used to help students generalize emerging academic competence (e.g., read aloud of a recipe or job ad.) What must change from prior years is spending the entire day *only* teaching these life skills. For students with moderate and severe disabilities to acquire independence in accessing and comprehending text, a sustained focus on literacy every day and every year will be needed. Some of these literacy skills will not have immediate functional use (e.g., blending sounds), but will be essential to optimal performance in reading.

Given that schools were also required to show student outcomes in math and science under NCLB (2001), and the research in these areas was even more limited than reading (Browder et al., 2008; Spooner et al., 2011), we began to explore what was possible in these other content areas. In mathematics, we found two strategies to be especially effective. One was to task analyze the math operation and teach each step using systematic prompting (Jimenez, Browder, & Courtade, 2008.) The other was to turn the math problem into an interactive read aloud building on what we had learned in literacy (Browder, Jimenez, & Trela, 2012.) (For an example of a math story, see Figure 2). When we used the math stories, we also included a graphic organizer for summarizing the numerical facts known and task analyzed the

steps to complete the problem. We found this strategy could be applied to a large array of the math standards for the grade level in which the student was placed based on chronological age (Browder et al., 2012). Horner et al. (2005) recommends at least five studies across three research teams with a minimum of 20 participants to identify a practice as evidence-based. Our collection of studies using math stories with graphic organizers and task analyses included more than 20 students with IQs below 55, but more studies with replication by other research teams is needed to build an evidence base.

In considering the rationale to teach mathematics, we discovered that many of the real life applications we could include in the math story problems were job-related or community-referenced activities. In the past we would focus on the activity (e.g., going to the mall) and insert a small amount of functional academics as critically needed (e.g., paying for an item with cash). Instead we began thinking about the standards of the students' assigned grade level based on their chronological age. I called this "grade-aligned" instruction. By thinking about the math concepts first, we began to discover more of the demands for mathematics in job and community contexts. Often the real life activity in which the skill would be applied could be lifted and adapted from the general education textbook word problems. Other times, we found the applications in thinking about the school or community experiences the students encountered. For example, one math lesson focused on planning how much paint would need to be purchased to create signs for a pep rally. Another focused on how machinists trace the surface area of a part and included an internet video clip of this real life application. The students seem to know that this was a new and high expectation. In the first study on algebra, the high school students would ask to go into the hall to show other students their materials. They wanted to take them home to show brothers and sisters they could do real math. One of Horner et al.'s (2005) criteria for indicating the quality of a study that contributes to an evidence base is to provide evidence of the social validity of the outcomes. Our teams have often asked the teachers, and if possible the students, if they liked the intervention. This preference for the content seems important in deciding to focus on more math instruction. In contrast, preference is only one way the importance of teaching skills like mathematics might be documented. The

ability to apply the skills in the actual activity (e.g., using real materials), generalization of problem solving to new contexts, and incidental learning (e.g., of literacy during math read alouds) might be additional ways to evaluate the impact of math instruction.

In science, we discovered that a variety of grade-aligned content was teachable if we used a standard format for directed inquiry (Browder et al., 2012). Students learned about a concept by engaging in an experiment (e.g., how a solution is formed or why it rains) and acquired new vocabulary to express what they had learned (e.g., solvent, solute, solution). (For an example of science, see Figure 3.) A series of studies followed in which our research teams focused on teaching science concepts (e.g., Knight, Spooner, Browder, & Smith, 2012; Jimenez, Browder, Spooner & DiBiase, 2012). We found students not only learned to state the concept, but they could generalize the concept to untrained materials (Jimenez, Browder, & Courtade, 2009). Science was probably the most fun of all the academic content areas to teach. Students had the opportunity to explore materials to see a concept come to life. They learned critical safety rules like not eating unknown materials and not mixing mysterious liquids. They looked through microscopes and saw the difference between a living leaf and a silk leaf. They learned what causes an earthquake and what makes it rain. I was visiting a classroom one day and asked a student what he was learning in science.

"Earth," he said pointing to a model of the earth.

"What about the earth?" I asked.

"It's big. It's round." He replied.

"What else?" I queried.

"I stand on it. Bigger than Charlotte. Bigger than the school."

"Anything else?" I asked.

"Don't eat it," he said applying a rule of thumb the teacher had given him for being safe during science.

Critics like Ayres, Lowrey, Douglas, and Sievers (2011) have noted that even though educators *can* teach skills aligned with grade level standards with severe disabilities, that does not mean that they *should* do so, especially if it comes at the cost of not acquiring essential life skills. In a recent publication, a team of us offered seven reasons why we think it is important to teach the state academic content standards (Courtade, Spooner, Browder, & Jimenez, 2012) which I will review briefly here. First, students with severe disabilities should have the right to a full educational opportunity. Curricular priorities for students with severe disabilities have evolved in the last three decades with each milestone reflecting increased expectations. We have discovered that these students: (a) can learn in public schools, (b) can learn skills relevant to their communities, (c) can benefit from opportunities to learn with their peers who are nondisabled, and (d) can learn state standards adapted for alternate achievement. Second, all of the Common Core State Standards (http://www.corestandards.org/) now adopted by most states, were developed to prepare students for the real life demands of adulthood. In teaching the standards, educators are teaching students to be ready for future careers and other life demands. A third reason is that educators do not yet know the potential of students with severe disabilities. Students have only received limited range of functional academics in the past. The surprise of the current era is that students may be able to learn algebra, science concepts, and reading. It is just as important to allow students with severe disabilities to pursue their academic potential as it is for all students. A fourth reason teaching state standards is justifiable, is that functional skills are not a prerequisite to academic learning. The double standard that has been applied to students with severe disabilities is to require mastering nearly all life skills before getting opportunities to learn reading, math, and other content. What would happen if educators applied the same criteria to all students? Rather than being considered "college ready", many students who currently have strong academic histories would still be learning to clean their rooms. A fifth reason is that academic and functional life skills can be taught concurrently. Students with severe

disabilities continue to need instruction in community, home, and job skills. These need not dominate the entire school day, but as mentioned previously can be taught during school routines and in classes specifically focused on life skills. Sixth, functioning as an adult without academic learning fosters dependency and limits job opportunities. Finally, students themselves are creating the changing expectations. When students demonstrate that they can learn more, it is difficult to justify teaching less.

Hunt and McDonnell (in press) have proposed that all decision making about what to teach students with severe disabilities be framed within an ecological curricular framework. An ecological curricular framework is one that begins with a student-focused approach. After defining quality of life goals with the student and family, the IEP team considers how to make prioritized state academic standards meaningful for the individual student. Individual objectives related to the standards are also addressed across multiple activities and contexts so that the student learns how to apply new academic contexts. As Hunt and McDonnell (in press) conclude, when educators frame what to teach students of severe disabilities as an either/or debate between state standards and functional life skills, they miss the opportunity to discover new ways to address both.

Recommendations for Moving Forward in Determining What to Teach

The curricular expectations for students with severe disabilities are changing rapidly as states adopt the Common Core State Standards for all students including those who participate in alternate assessments. Educators do not yet have the science to know how to teach most of these standards to students with moderate and severe developmental disabilities. There are some emerging directions like using interactive read alouds for comprehension of text, teaching science concepts, and using task analyses with real life applications to teach math processes. However, until more research emerges, there is a need to proceed with caution as well as expectation. I would like to offer several recommendations for moving forward.

1. *Use research based practices.* How much individuals with moderate and severe disabilities will learn will depend on how well they are taught. Providing many opportunities to respond with systematic prompting and feedback used to shape correct responding has been a powerful strategy for teaching academic content to students with moderate and severe disabilities. For example, Jameson, McDonnell, Polychronis, & Riesen (2008) taught middle school peer tutors to provide instruction on key vocabulary in general education classes to students with moderate intellectual disability. The peers learned to embed trials using time delay for near errorless learning. In a study by Collins, Branson, Hall, & Rankin (2001), students with moderate intellectual disability learned letter writing components in 12th grade composition through a task analysis and system of least intrusive prompting provided by peers. In Mims et al. (2009), students with severe intellectual disability, who were also legally blind, learned to answer comprehension questions during a read aloud through a system of least intrusive prompting. For students to have the optimal context for learning academic content, special education teachers need to master the application of systematic instruction strategies with fidelity. Unfortunately, sometimes teachers learn to use the terms (e.g., time delay), but not to apply the practice. Student teaching, internships, and professional development need to give teachers the opportunity to demonstrate that they can effectively deliver systematic instruction.
2. *Provide templates and resources.* Teachers often simply do not have time to "cook from scratch" in creating plans to teach general curriculum content. One option is to provide a template for instruction that can be applied across a wide range of standards. In Browder, Trela et al., (2012), we used a prescribed intervention across multiple math standards (math story+ graphic organizer+ task analysis of process) and across science standards (inquiry task analysis+concept statement+ experiment). By training teachers in the format, they could generate lessons for additional standards (Browder, Jimenez et al., 2012). Our research teams also have translated several of our studies into commercial curricula with Attainment Company that include scripted lesson plans (making systematic instruction accessible to all teachers) and student materials (reducing preparation time). I encourage other researchers to find ways to make interventions commercially available. One way to shorten the

distance between research and practice is to translate an intervention into a teacher-friendly format (e.g., something that can be displayed and purchased in a conference exhibit.)

3. *Produce models of blended practice.* The difficult current challenge for teachers is providing instruction on challenging academic standards that is meaningful to students while retaining the integrity of the content. Skills needed for independence in home, community, and job settings continue to be critical to achieving optimal post-school outcomes, but may be overlooked with the current strong focus on teaching to the standards. What teachers need are models of blended practice that offer examples of high quality academic instruction and community-referenced instruction. For example, the NSTTAC website (www.NSTTAC.org) offers examples of addressing content standards and transition goals concurrently for older students. A blended practice does not mean every lesson is must be both academic and community-referenced. Sometimes the priority of a lesson may be to master the academic concept. Sometimes the priority of a lesson may be a specific activity of daily living with no academic focus (e.g., handwashing).
4. *Revisit expectations for achievement as new research emerges.* At the present time little is known about how much academic content students with moderate and severe disabilities can learn. The research on teaching grade level standards and reading suggests that it is much more than what was once thought possible. Most would agree, the goal probably is some form of alternate, rather than grade level, achievement. That is, the student will learn some specific skills in geometry that are typical of what all 5th graders learn, but not the entire set of skills and possibly in ways that are adapted (e.g., demonstrated with manipulatives only). This alternate achievement also must take into consideration gaps in past learning. Students with severe disabilities progress across grade levels based on their chronological age rather than by passing end of grade testing. Alternate assessments have school accountability, but not student accountability. That is, students do not have to "pass" an alternate assessment to move forward to the next grade. An 8th grader with severe disabilities may not have mastered the 7th grade math objectives set for her. This 8th grader also may or may not have had any math instruction in the elementary grades. In contrast, another student in the 8th grade may

have had years of instruction in math and performed well on objectives set for 7th grade. This variable context makes it difficult to set standards for alternate assessments and teacher effectiveness. As more research emerges, and students have access to general curriculum content across their school careers, it may become easier to establish benchmarks for what to expect across grades or grade bands for students with severe disabilities.

5. *Evaluate longterm outcomes.* The adult outcomes for students with moderate and severe disabilities often have been disappointing with only a small percent gaining employment. For example, only about a third of students with all levels of intellectual disability gain employment (NLTS2); the number is likely lower for those with more severe disabilities. Improving adult service options, like increased access to supports for employment and community living, will certainly be critical to enhanced outcomes. What is not yet clear is if promoting increased academic competence will help students gain access to these supports and enhance their overall functioning as adults. The Common Core State Standards were developed to help all students become college and career ready. What is not yet known is if teaching to these standards will help more students with moderate and severe disabilities enter careers and participate in college programs for students with intellectual disabilities.

Summary

In this chapter I have shared how after investing 20 years in research on teaching daily living, and functional academic skills, I shifted my focus to promoting academic learning for students with moderate and severe disabilities. My shift began with seeing the creative thinking some state teams had done in developing their alternate assessments and then fully evolved as I saw actual students perform academic skills once considered unreachable because of the severity of their disability. Although I have been one of the advocates for making literacy the top priority of instruction and providing instruction of state standards for all students, I continue to encourage educators to use a blended approach that includes promoting real life applications for all skills and continuing to teach important life skills that have no academic link. One of the most frequent emails I receive from educators asks, “Should an IEP include some functional life skills? Must these be aligned with the

state's academic content standards?" My answer is that I believe the IEP is where the blending begins. All students should have IEPs that promote learning the general curriculum content of their assigned grade level, but also contain the other unique needs the student has for specially designed instruction in self care, social skills, and related therapies. Trying to link all of these other skills to the state academic standards is neither necessary nor feasible.

I have written this chapter to share the journey of how my thinking and research related to general curriculum access for students with severe disabilities evolved. I encourage the reader to engage other experts in severe disabilities to consider their perspectives about what should be taught. I also welcome your thinking and feedback. One of the principles of scientific inquiry is to disclose research to encourage professional scrutiny and critique (National Research Council, 2002). I hope that by sharing not only my research, but the evolution of my thinking about what to teach students with severe disabilities, I have encouraged you to articulate your own perspective. I look forward to hearing what you have to say and anticipate my own thinking will continue to develop. If you read this book several years from its original publication date, please realize I may have gained a new perspective.

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Figure 1. Example of Adapted Text written as a simplified summary of Chapter 1 of *Because of Winn Dixie* by Kate DiCamillo published by Candlewick Press.

Note: The teacher reads the passage aloud engaging the student in the reading. For example, the student might repeat, "Who let the dirty dog in here?" using a voice output device. At the end of the page, or end of the story, the teacher asks the comprehension question shown. The student answers by pointing to a picture. The pictures may be on a communication device.

My name is India Opal Buloni. My dad calls me Opal. My dad is a preacher. We just moved to Naomi, Florida. Last summer, the preacher sent me to Winn-Dixie grocery store. I walked into the produce section and the manager was yelling "Who let a dirty dog in here?" The manager was going to send the dog to the pound, but I kept him. I named him , Winn-Dixie and he smiled.

Who did Opal name Winn-Dixie?

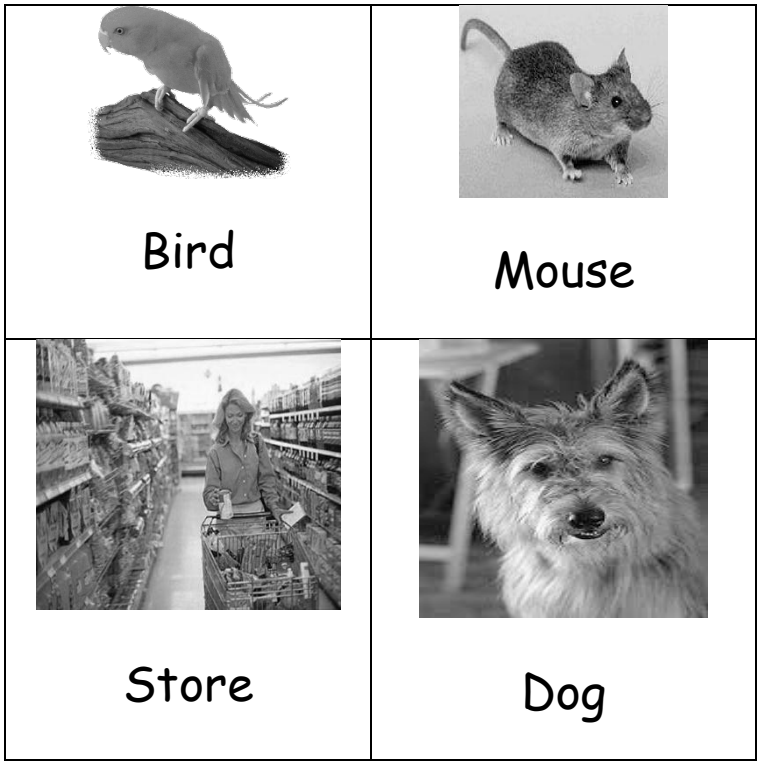

Figure 2. Example of a Math Story and Task Analysis

James has a new job in a sub shop. He bakes the bread for the subs. Sometimes the customer wants a whole sub. Sometimes they want a half sub. How many subs will James need to bake if 1 customer wants 3 half subs (3/2) and another wants only one half sub (1/2)?

TASK ANALYSIS

1. Locate the first known fact (3/2)
2. Represent it with manipulatives (Note: use pictures of subs cut in half; three halves)
3. Locate the second known fact (1/2)
4. Represent it with manipulatives (one half sub)
5. Count to add (counting 1,2,3,4)
6. Communicate the answer (four halves)
7. Write the answer using math symbols (4/2)
8. Simplify the fraction (4/2=2) (Use template to set halves on to create wholes)
9. Answer the question (2 loaves)

Figure 3. Example of Science Concept

Note: The teacher uses the KWHL chart below to focus the lesson. Students communicate what they know. The teacher poses what she wants them to find out and asks them how they could find this information (look and touch). After some time exploring the materials (real rocks), the teacher helps the student summarize what they learned and fill in the concept statement.

Rocks have different _____.

K What We Know	W Want to Find Out	H How to Find Out	L What We Learned
It is a rock.	How differ	Look and touch	Size, color, shape are different

Which of these words will finish our sentence “Rocks have different-?

feet

sizes

colors

houses

shapes